

**REMARKS**

Claims 12-19, 21-25, 51-57, and 59-61 are pending in the Application.

Claim 59 is amended herein to correct dependency.

Claim 61 is amended herein to correct a typographical error.

Claims 12-19, 21-25, and 56 are allowed.

Claims 51-55, 57, and 59-61 stand rejected.

No new matter has been added.

**I. RESPONSE TO APPEAL**

Applicants gratefully acknowledge allowance of claims 12-19, 21-25, and 56.

**II. TELEPHONE CLARIFICATION**

Applicants acknowledge with appreciation Examiner's clarification of the § 103(a) rejection in a telephone conversation with Heather Flanagan on June 20, 2008. In the conversation, Examiner clarified the statement "[t]hus, it would have been obvious for one of ordinary skill in the art to modify the reference of Meyer by deuterating at least one of the markers made up of the disclosed markers that can be produced with stable isotopes not generally found in nature in order to gain the advantages of readily available and easy to make markers that are more environmentally friendly"<sup>1</sup> to mean that it would have been obvious to deuterate the markable liquid of *Meyer*, such that the markable liquid becomes a marker. The markable liquid is described in col. 14, l. 51 through col. 15, l. 12 of *Meyer*.

**III. REJECTION UNDER 35 U.S.C. § 103(a)**

**A. Claims 51-54 and 58-61**

Claims 51-54 and 58-61 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,312,958 to Meyer ("Meyer") in view of U.S. Patent No 5,474,937 to Anderson II *et al.* ("Anderson '937"). Office Action, at 2-4.

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<sup>1</sup> Office Action, at 4.

Applicants traverse this rejection.

As noted above, the Office Action states it would have been obvious to deuterate the markable liquid of *Meyer*, such that the markable liquid becomes a marker. A review of the cited art and application of the proper obviousness analysis does not support this contention.

There is an important distinction between a marker and the markable liquid described and taught in *Meyer*. *Meyer* describes and teaches “liquids marked by the method of the invention.” *Meyer*, col. 1, ll. 23-24. These markable liquids, including alcohols such as ethanol or methanol; ethers such as dioxane; ketones such as acetone; and aliphatic or aromatic hydrocarbons such as octane and xylene, are listed in col. 14, l. 51 – col. 15, l. 12 of *Meyer*. *Meyer* states: “[t]o mark the liquids, the compounds identified above as markers, or, to be more precise, the combination of at least two markers, are generally added in the form of a (stock) solution.” *Meyer*, col. 15, ll. 35-38. Thus, the markers and the markable liquid of *Meyer* are distinct.

The Office Action, however, states: “[m]arkers that fit within the desired range of *Meyer*, meaning within 600-1200 nm include alcohols such as ethanol or methanol; ethers such as dioxane; ketones such as acetone; and aliphatic or aromatic hydrocarbons such as octane, xylene (column 14 lines 55-67).” Office Action, at 3. This statement is incorrect. In fact, alcohols such as ethanol or methanol; ethers such as dioxane; ketones such as acetone; and aliphatic or aromatic hydrocarbons such as octane and xylene are *not* markers in *Meyer*.

Rather, *Meyer* describes a method of marking liquids (*i.e.*, the markable liquid) using at least two markers, wherein the two markers “absorb in the 600-1200 nm region of the spectrum and reemit fluorescent light and the absorption range of at least one marker overlaps with the absorption range of at least one other marker.” *Meyer*, col. 1, ll. 7-12. *Meyer* lists preferred markers as “compounds selected from the group consisting of metal-free and metal-containing phthalocyanines, metal-free and metal-containing naphthalocyanines, nickel-dithiolene complexes, aminium compounds of aromatic amines, methane dyes, squaric acid dyes and croconic acid dyes.” *Meyer*, col. 4, ll.21-25. It is clear to one of ordinary skill in the art that the absorption described by *Meyer* is electronic absorption. It is equally clear that *Meyer* does not expressly disclose, teach, or suggest artificially enhancing the markers with a non-radioactive

isotope (such as by the addition of a deuterium atom). Examiner concurs that *Meyer* contains no such express disclosure or teaching. Office Action, at 3.

Furthermore, *Meyer* does not teach or suggest the markable liquid and the marker are the same chemical substance, and there is nothing in *Meyer* to teach or suggest altering the markable liquid so that itself is a marker. Rather, *Meyer* teaches the use of markers to be added to a markable liquid that is not itself chemically altered. Therein lies a fundamental problem with Examiner's obviousness rejection. There is no reason to chemically alter the markable liquid in *Meyer* to convert it into a "marker" in *Meyer*. This is particularly so because this "marker" would have none of the properties of the markers described by *Meyer*, and, moreover, there is no purpose suggested in *Meyer* (or elsewhere) for having this "marker" with properties other than those described. In short, *Meyer* does not teach or suggest doing anything to the markable liquid to make the markable liquid itself a marker.

*Anderson* '937 does not teach or suggest anything that fills the voids of *Meyer* and, like *Meyer*, likewise fails to provide any suggestion why their teachings should be combined. When discussing *Anderson* '937, the Examiner states: "Examples of molecular markers that Anderson teaches labeling with a non-radioactive isotope include solvents taught by Meyer as markers such as acetone, dioxane, ethanol, methanol, octane or xylene (column 4 lines 10-19)." Office Action, at 3-4. Contrary to this statement, *Meyer* teaches that acetone, dioxane, ethanol, methanol, octane, or xylene are markable liquids, *not* markers.

The Office Action further states: "Anderson '937 teaches that the advantage of the disclosed method is that any compound that can be produced with stable isotopes not generally found in nature may be deuterated (column 4 lines 1-5). Additional advantages to Anderson's molecular markers is that they are readily available, easy to make and non-radioactive. Thus, it would have been obvious for one of ordinary skill in the art to modify the reference of Meyer by deuterating at least one of the markers made up of the disclosed markers that can be produced with stable isotopes not generally found in nature in order to gain the advantages of readily available and easy to make markers that are more environmentally friendly." Office Action, at 4.

As with *Meyer*, there is no suggestion or motivation in *Anderson* '937 to utilize a marker such as disclosed in *Anderson* '937 with the markers of *Meyer* (particularly by chemically altering the markable liquid). Again, the markers of *Anderson* '937 do not possess the basic properties of markers defined by *Meyer*. *Meyer*, col. 1, ll. 6-11. While *Meyer* requires an overlap in absorption ranges of at least two markers, the markers of *Anderson* '937 do not undergo electronic transitions in the spectral region described by *Meyer*. Thus, an electronic absorption range of a marker described by *Anderson* '937 cannot overlap with the electronic absorption range of a marker described by *Meyer*. Furthermore, it is unclear how the markers of *Anderson* '937, detected by gas chromatography/mass spectrometry (*Anderson* '937, col. 6, ll. 35-38) would be detected by the optical spectroscopic methods of *Meyer*.

Labeling a markable liquid of *Meyer* for use instead as a marker in *Meyer* provides no reasonable expectation of success, and would render *Meyer* unsatisfactory for its intended purpose. Such a modification can only be explained as a result of hindsight reasoning. Hindsight analysis of the prior art and picking and choosing aspects of references based on Applicants' Application is an improper analysis for asserting an obviousness rejection. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. at 1742-43. "It is well settled that the claims cannot be used in hindsight as a template to reconstruct the invention willy-nilly by picking and choosing elements at will from prior art." *Procter & Gamble Co. v. Paragon Trade Brands, Inc.*, 989 F. Supp. 547, 587 (D. Del. 1997); *In re Gorman*, 933 F.2d 982, 987, 18 U.S.P.Q.2d 1885 (Fed. Cir. 1991).

Thus, a *prima facie* case of obviousness has not been established. Accordingly, Applicants respectfully request that the Examiner withdraw the § 103(a) rejection of Claims 51 and 61, and Claims 52-54, 59, and 60 dependent from Claim 51.

**B. Claim 55**

Claim 55 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Meyer* in view of *Anderson* '937 and further in view of U.S. Patent No. 3,746,634 to Atkinson et al. ("Atkinson"). Office Action, at 5.

Applicant traverses this rejection.

The Office Action states: "Atkinson teaches a method of deuterating a cyclic hydrocarbon having at least 10 carbon atoms and a melting point no greater than 300 degrees Celsius. Based on this teaching, one of ordinary skill in the art would deuterate any hydrocarbon meeting these conditions, including polynuclear aromatic hydrocarbons in order to obtain the predictable result of deuterating the compounds." Office Action, at 5.

*Atkinson* states, however: "Should the selected hydrocarbon starting material be unsaturated, i.e. an aromatic or olefinic compound, it will be deuterogenated under the reaction conditions of this invention to form the novel saturated deuterated hydrocarbons of this invention." *Atkinson*, col. 2, ll. 48-52. Thus, the products described by *Atkinson* are *saturated* deuterated hydrocarbons.

Claim 55 recites "wherein the second marker is a polynuclear aromatic hydrocarbon." That is, Claim 55 in combination with Claim 51 requires a polynuclear aromatic hydrocarbon that is artificially enhanced with a non-radioactive isotope. Since the products of *Atkinson* are all saturated, the combination of the cited art does not teach or suggest a polynuclear aromatic hydrocarbon that is artificially enhanced with a non-radioactive isotope.

The rejection seems to be based on the premise that deuterating a polynuclear aromatic hydrocarbon yields a deuterated polynuclear aromatic hydrocarbon. According to *Atkinson*, however, deuterating a polynuclear aromatic hydrocarbon yields a saturated hydrocarbon.

Like *Meyer* and *Anderson '937*, *Atkinson* fails to provide any basis for combining *Meyer* and *Anderson '937* (alone or with *Atkinson*). For this reason, as well as for the reasons discussed in Section III.A above, the cited art does not teach all the elements of Claim 55. As such, a *prima facie* case of obviousness has not been established. Accordingly, Applicants respectfully request that the Examiner withdraw the § 103(a) rejection of Claim 55.

C. Claim 57

Claim 57 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Meyer* in view of *Anderson '937* and further in view of *Atkinson* and further in view of U.S. Patent No. 5,981,283 to Anderson ("Anderson '283"). Office Action, at 5-6.

Applicant traverses these rejections.

The compounds in Claim 57 are unsaturated aromatic compounds. As discussed in Section III.B above, the products of *Atkinson* are all saturated. As such, the combination of the cited art does not teach or suggest an aromatic molecular marker that is artificially enhanced with a non-radioactive isotope.

For this reason, as well as for the reasons discussed in Section III.A above, a *prima facie* case of obviousness has not been established. Accordingly, Applicants respectfully request that the Examiner withdraw the § 103(a) rejection of Claim 57.

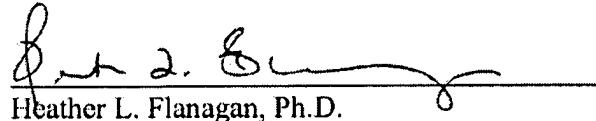
**IV. CONCLUSION**

As a result of the foregoing, it is asserted by Applicants that the Claims in the Application are now in condition for allowance, and respectfully request allowance of such Claims.

Please apply necessary charges or credits to Deposit Account No. 06-1050. Please reference Attorney Docket No. 21546-022001.

Respectfully submitted,

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